

## CLAIMS

What is claimed is:

- 1) In a computer system, a method for formatting table data comprising:
  - obtaining a group of records;
  - obtaining layout information from a user wherein said layout information is stored independent of said group of records;
  - dynamically applying said layout information to said first table to generate a preview table;
  - displaying said preview table to said user.
- 2) The method of claim 1 wherein said user modifies said layout information and said computer system iteratively executes said step of dynamically applying said layout information to said first table to generate said preview table.
- 3) The method of claim 1 wherein said group of records comprises a plurality of fields.
- 4) The method of claim 1 wherein said group of records comprises a plurality of attributes.
- 5) The method of claim 1 wherein said group of records are related by at least one common value.

- 6) The method of claim 5 wherein said at least one common value represents at least one value from said group of records
- 7) The method of claim 1 further comprising:  
displaying at least a subset of said group of records in a table.
- 8) The method of claim 1 wherein said layout information defines hidden fields.
- 9) The method of claim 1 wherein said layout information defines hidden attributes.
- 10) The method of claim 1 wherein said layout information comprises at least one pivot value associated with a pivot operation.
- 11) The method of claim 10 wherein said at least one pivot value is hidden from said preview table.
- 12) The method of claim 10 wherein said at least one pivot value is from said group of records.
- 14) The method of claim 10 wherein said pivot operation reduces redundant information displayed in said preview table.
- 15) The method of claim 10 wherein said pivot operation comprises:  
identifying at least one pivot axis in a table wherein said pivot access corresponds to said at least one pivot value;  
removing said at least one pivot axis from said table;

generating said preview table by breaking said preview table into sub-tables based on said at least one pivot axis.

- 16) The method of claim 15 wherein said pivot axis comprises a row in said table.
- 17) The method of claim 15 wherein said pivot axis comprises a column in said table.
- 18) The method of claim 15 further comprising:  
sorting said group of records from said table into said sub-tables based on said at least one pivot value of said pivot axis.
- 19) The method of claim 15 wherein said pivot operation comprises a horizontal pivot comprising:  
combining said sub-tables into said preview table by arranging said sub-tables horizontally.
- 20) The method of claim 19 further comprising:  
adding an additional row to said preview table comprising said at least one pivot value, said additional row labeling said sub-tables.
- 21) The method of claim 15 wherein said pivot operation comprises a stack pivot comprising:  
combining said sub-tables into said preview table by arranging said sub-tables vertically.

- 22) The method of claim 21 further comprising adding an additional row to said preview table containing said at least one pivot value before each of said sub-tables.
- 23) The method of claim 21 further comprising:
- preserving each of said sub-tables;
- labeling said sub-tables with said at least one pivot value.
- 25) The method of claim 15 wherein said pivot operation comprises a vertical pivot, said vertical pivot comprising:
- combining sub-tables into a table by arranging said sub-tables vertically.
- 26) The method of claim 25 further comprising:
- adding an additional column containing said at least one pivot value to label a group of rows comprising each sub-table.
- 27) The method of claim 10 wherein said pivot operation comprises a horizontal pivot.
- 28) The method of claim 27 wherein at least one additional horizontal pivot is nested with said horizontal pivot.
- 29) The method of claim 10 wherein said pivot operation comprises a stack pivot.
- 30) The method of claim 29 wherein at least one additional stack pivot is nested with said stack pivot.

- 31) The method of claim 10 wherein said pivot operation comprises a vertical pivot.
- 32) The method of claim 1 wherein said layout information comprises fields for performing an ordering operation.
- 33) The method of claim 1 wherein said layout information identifies fields to be shown in said preview table.
- 34) The method of claim 33 wherein said layout information identifies a display sequence associated with said fields to be shown in said preview table.
- 35) The method of claim 1 wherein said displaying said preview table occurs in real-time subsequent to said obtaining layout information.
- 36) The method of claim 1 further comprising:  
providing contents of said preview table to a publication program.
- 37) The method of claim 1 wherein said layout information identifies empty columns of said preview table to hide.
- 38) The method of claim 1 wherein said layout information identifies cells of said preview table having equal values for merging.
- 39) The method of claim 38 wherein said merging is with a sub-table of said preview table.
- 40) In a computer system, a method for presenting family data comprising:

obtaining family data comprising a group of records related by at least one common value, wherein said family data comprises a subset of a hierarchical structure defined by a partition;

generating a family table from said family data;

presenting a visual representation of said family table to a user;

obtaining layout information from a user;

storing said layout information in said computer system independent of said family data;

dynamically applying said layout information to said family table to generate a first preview table of said family data wherein said group of records in said first preview table depends on said layout information;

presenting a visual representation of said first preview table to said user.

41) The method of claim 40 further comprising:

obtaining additional layout information from said user;

dynamically applying said additional layout information to said first preview table;

regenerating said first preview table to form a second preview table, wherein said group of records in said second preview table depends on said additional layout information.

42) The method of claim 40 further comprising:

obtaining modified layout information from said user, wherein said modified layout information differs from said layout information;

dynamically applying said modified layout information to said table; regenerating said first preview table to form a second preview table, wherein said group of records in said second preview table depends on said at modified layout information.

43) The method of claim 40 wherein said step of dynamically applying said layout information executes in real-time upon obtaining said layout information from said user.

44) The method of claim 40 wherein said obtaining family data comprising a group of records related by at least one common value comprises:

obtaining a taxonomy comprising at least one category field, said taxonomy comprising said hierarchical structure;

utilizing said at least one category field to define said partition in a partitioning hierarchy;

layering said partitioning hierarchy on top of said taxonomy.

45) The method of claim 44 further comprising:

defining an additional partition on said partitioning hierarchy.

46) The method of claim 44 where a pivot operation is performed at any level in said partitioning hierarchy.

47) The method of claim 46 wherein said layout information comprises inheritance properties associated with child nodes of said partitioning hierarchy.

- 48) The method of claim 47 wherein said layout information comprises information for overriding said inheritance properties on a node-by-node basis.
- 49) The method of claim 40 wherein said layout information comprises at least one pivot operation, said at least one pivot operation providing a mechanism for reducing redundant information shown in said first preview table.
- 50) The method of claim 49 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one stack pivot.
- 51) The method of claim 50 wherein at least one additional stack pivot is nested with said at least one stack pivot.
- 52) The method of claim 49 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one horizontal pivot.
- 53) The method of claim 52 wherein at least one additional horizontal pivot is nested with said horizontal pivot.
- 54) The method of claim 39 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one vertical pivot.
- 55) The method of claim 54 wherein at least one additional vertical pivot is nested with said vertical pivot.
- 56) The method of claim 49 wherein said at least one pivot operation comprises:  
identifying at least one pivot axis in a table wherein said pivot axis corresponds to said at least one pivot value;

removing said at least one pivot axis from said table;  
generating said first preview table by breaking said first preview table into sub-tables based on said at least one pivot axis.

- 57) The method of claim 56 wherein said pivot axis comprises a row in said table.
- 58) The method of claim 56 wherein said pivot axis comprises a column in said table.
- 59) The method of claim 56 further comprising:  
sorting said family data into said sub-tables based on said at least one pivot value of said pivot axis.
- 60) The method of claim 56 wherein said at least one pivot operation comprises a horizontal pivot comprising:  
combining said sub-tables into said first preview table by arranging said sub-tables horizontally.
- 61) The method of claim 60 further comprising:  
adding an additional row to said preview table comprising said at least one pivot value, said additional row labeling said sub-tables.
- 62) The method of claim 56 wherein said at least one pivot operation comprises a stack pivot comprising:  
combining said sub-tables into said first preview table by arranging said sub-tables vertically.

63) The method of claim 62 further comprising adding an additional row to said first preview table containing said at least one pivot value before each of said sub-tables.

64) The method of claim 62 further comprising:

preserving each of said sub-tables;

labeling said sub-tables with said at least one pivot value.

65) The method of claim 56 wherein said pivot operation comprises a vertical pivot, said vertical pivot comprising:

combining sub-tables into said first preview table by arranging said sub-tables vertically.

66) The method of claim 65 further comprising:

adding an additional column containing said at least one pivot value to label a group of rows comprising each sub-table.

67) In a computer system, a method for presenting family data comprising:

obtaining family data comprising a group of records related by at least one common value, wherein said family data comprises a subset of a hierarchical structure defined by a partition;

generating a family table from said family data;

presenting a visual representation of said family table to a user;

obtaining at least one pivot value from a user, wherein said at least one pivot value comprise data associated with said family table;

storing said at least one pivot value in said computer system independent of said family data;

dynamically applying said at least one pivot value to said family table during at least one pivot operation, wherein said at least one pivot operation generates a first preview table of said family data wherein said group of records in said first preview table depends on said at least one pivot value;

presenting a visual representation of said first preview table to said user.

68) The method of claim 67 further comprising:

obtaining at least one additional pivot value from said user;

dynamically applying said at least one additional pivot value to said first preview table;

regenerating said first preview table to form a second preview table, wherein said group of records in said second preview table depends on said at least one additional pivot value.

69) The method of claim 67 further comprising:

obtaining at least one different pivot value from said user, wherein said at least one different pivot value differs from said at least one pivot value;

dynamically applying said at least one different pivot values to said table;

regenerating said first preview table to form a second preview table, wherein said group of records in said second preview table depends on said at least one different pivot value.

70) The method of claim 67 wherein said step of dynamically applying said at least one pivot value executes in real-time upon obtaining said at least one pivot value.

71) The method of claim 67 wherein said obtaining family data comprising a group of records related by at least one common value comprises:

obtaining a taxonomy comprising at least one category field, said taxonomy comprising said hierarchical structure;

utilizing said at least one category field to define said partition in a partitioning hierarchy;

layering said partitioning hierarchy on top of said taxonomy.

72) The method of claim 71 further comprising:

defining an additional partition on said partitioning hierarchy.

73) The method of claim 71 where said at least one pivot operation is performed at any level in said partitioning hierarchy.

74) The method of claim 67 wherein said step of obtaining at least one pivot value from said user comprises:

obtaining layout information.

75) The method of claim 74 wherein said layout information comprises inheritance properties associated with child nodes of said portioning hierarchy.

76) The method of claim 75 wherein said layout information comprises information for overriding said inheritance properties on a node-by-node basis.

- 77) The method of claim 67 wherein said at least one pivot operation reduces redundant information shown in said first preview table.
- 78) The method of claim 67 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one stack pivot.
- 79) The method of claim 78 wherein at least one additional stack pivot is nested with said at least one stack pivot.
- 80) The method of claim 67 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one horizontal pivot.
- 81) The method of claim 80 wherein at least one additional horizontal pivot is nested with said horizontal pivot.
- 82) The method of claim 67 wherein said at least one pivot operation utilizes said at least one pivot value to execute at least one vertical pivot.
- 83) The method of claim 67 wherein said at least one pivot operation comprises:  
identifying at least one pivot axis in a table wherein said pivot axis corresponds to said at least one pivot value;  
removing said at least one pivot axis from said table;  
generating said first preview table by breaking said first preview table into sub-tables based on said at least one pivot axis.
- 84) The method of claim 83 wherein said pivot axis comprises a row in said table.
- 85) The method of claim 83 wherein said pivot axis comprises a column in said table.

- 86) The method of claim 83 further comprising:  
sorting said family data into said sub-tables based on said at least one pivot  
value of said pivot axis.
- 87) The method of claim 83 wherein said at least one pivot operation comprises a  
horizontal pivot comprising:  
combining said sub-tables into said first preview table by arranging said sub-  
tables horizontally.
- 88) The method of claim 87 further comprising:  
adding an additional row to said preview table comprising said at least one pivot  
value, said additional row labeling said sub-tables.
- 89) The method of claim 83 wherein said at least one pivot operation comprises a  
stack pivot comprising:  
combining said sub-tables into said first preview table by arranging said sub-  
tables vertically.
- 90) The method of claim 89 further comprising adding an additional row to said first  
preview table containing said at least one pivot value before each of said sub-tables.
- 91) The method of claim 89 further comprising:  
preserving each of said sub-tables;  
labeling said sub-tables with said at least one pivot value.

92) The method of claim 83 wherein said pivot operation comprises a vertical pivot, said vertical pivot comprising:

combining sub-tables into said first preview table by arranging said sub-tables vertically.

93) The method of claim 92 further comprising:

adding an additional column containing said at least one pivot value to label a group of rows comprising each sub-table.

94) A computer program product comprising:

a computer usable medium having computer readable program code configured to format table data embodied therein, said computer readable program code configured to:

display in a graphical user interface a table having at least one field name and records associated with said at least one field name;

display in said graphical user interface a layout component comprising a plurality of formatting commands for manipulating said table;

display said field names in said layout component;

obtain input from a user wherein said input comprises at least one field name;

dynamically execute at least one of said plurality of formatting commands using said at least one field name, wherein said formatting command modifies said

table to generate a preview table comprising less redundant information in said preview table's records than said records of said table;

display said preview table to said user in said graphical user interface.

95) The computer program product of claim 94 wherein said computer readable program code configured to dynamically modify said table comprises at least one pivot operation.

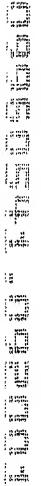
96) The computer program product of claim 94 wherein at least one of said formatting commands comprises an inheritance property associated with said at least one pivot operation.

97) The computer program product of claim 94 wherein at least one of said formatting commands comprises an inherit display order command.

98) The computer program product of claim 94 wherein said dynamically modifying said table to generate said preview table comprising less redundant information comprises merging each of said plurality of rows having duplicate information.

99) The computer program product of claim 94 wherein at least one of said plurality of formatting commands comprises a stack pivot command and said at least one field name comprises a value utilized to perform a stack pivot on said table.

100) The computer program product of claim 94 wherein at least one of said plurality of formatting commands comprises a horizontal pivot command and said at least one field name comprises a value utilized to perform a horizontal pivot on said table.

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- 101) The computer program product of claim 94 wherein at least one of said plurality of formatting commands comprises a vertical pivot command and said at least one field name comprises a value utilized to perform a vertical pivot on said table.
  - 102) The computer program product of claim 94 wherein said dynamically modifying said table to generate said preview table comprising less redundant information comprises sorting said table.
  - 103) The computer program product of claim 94 wherein said table comprises family data.
  - 104) The computer program product of claim 94 wherein said user can remove said at least one field name using said layout component and said computer readable program code dynamically modifies said preview table accordingly.
  - 105) The computer program product of claim 94 wherein said computer readable program code identifies said at least one field as a hidden file and removes a view of said at least one field from said preview table.
  - 106) An apparatus for formatting table data comprising:
    - a processor;
    - memory coupled to said processor;
    - said memory comprising a module configured to obtain a group of records,
    - obtain layout information from a user wherein said layout information is stored

independent of said group of records, and dynamically apply said layout information to said first table to generate a preview table;

a display mechanism configured to present said preview table to said user.

107) The apparatus of claim 106 wherein said apparatus generates said preview table in real time upon receipt of said layout information.

108) The apparatus of claim 106 wherein said group of records comprises a plurality of fields.

109) The apparatus of claim 106 wherein said group of records comprises a plurality of attributes.

110) The apparatus of claim 106 wherein said group of records are related by at least one common value.

111) The apparatus of claim 110 wherein said at least one common value represents at least one value from said group of records

112) The apparatus of claim 106 wherein said layout information defines hidden fields associated with said preview table.

113) The apparatus of claim 106 wherein said layout information defines hidden attributes associated with said preview table.

114) The apparatus of claim 106 wherein said layout information comprises at least one pivot value.

- 115) The apparatus of claim 106 wherein said at least one pivot value is hidden when said display mechanism displays said preview table.
- 116) The apparatus of claim 106 wherein said at least one pivot value is from said group of records.
- 117) The apparatus of claim 106 wherein said pivot operation reduces redundant information displayed in said preview table.
- 118) The apparatus of claim 106 wherein said module is configured to identify at least one pivot axis in a table wherein said pivot access corresponds to said at least one pivot value, remove said at least one pivot axis from said table, and generate said preview table by breaking said preview table into sub-tables based on said at least one pivot axis.
- 119) The apparatus of claim 118 wherein said pivot axis comprises a row in said table.
- 120) The apparatus of claim 118 wherein said pivot axis comprises a column in said table.
- 121) The apparatus of claim 118 wherein said module is further configured to sort said group of records from said table into said sub-tables based on said at least one pivot value of said pivot axis.
- 122) The apparatus of claim 118 wherein said module is further configured to combine said sub-tables into said preview table by arranging said sub-tables horizontally.

123) The apparatus of claim 118 wherein said module is further configured to add an additional row to said preview table comprising said at least one pivot value, said additional row labeling said sub-tables.

124) The apparatus of claim 118 wherein said module is further configured to combine said sub-tables into said preview table by arranging said sub-tables vertically.

125) The apparatus of claim 124 wherein said module is further configured to add an additional row to said preview table comprising said at least one pivot value before each of said sub-tables.

126) The apparatus of claim 125 wherein said module is further configured to preserve each of said sub-tables and label said sub-tables with said at least one pivot value.

127) The apparatus of claim 118 wherein said module is further configured to combine said sub-tables into a table by arranging said sub-tables vertically.

128) The apparatus of claim 127 wherein said module is further configured to add an additional column comprising said at least one pivot value to label a group of rows comprising each sub-table.

129) The apparatus of claim 106 wherein said layout information comprises fields for enabling said module to perform a sorting operation.

130) The apparatus of claim 106 wherein said layout information identifies fields to be shown in said preview table when said display mechanism presents said preview table.

131) The apparatus of claim 106 wherein said layout information identifies a display sequence associated with said fields to be shown in said preview table when said display mechanism presents said preview table.

132) The apparatus of claim 106 wherein said display mechanism presents said preview table in real-time subsequent to said obtaining layout information.

133) The apparatus of claim 106 further comprising:

a publication module, said publication module configured to prepare said preview table for publication.

134) The apparatus of claim 106 wherein said layout information identifies empty columns of said preview table to hide.

135) The apparatus of claim 106 wherein said layout information identifies cells of said preview table having equal values for said module to merge.

136) In a computer system, a method for formatting table data comprising:  
obtaining a group of records;  
obtaining pivot information from a user;  
dynamically applying said pivot information to said first table to generate a preview table;  
displaying said preview table to said user.

137) The method of claim 136 wherein said user modifies said pivot information and said computer system iteratively executes said step of dynamically applying said pivot information to said first table to generate said preview table.

138) The method of claim 136 wherein said group of records comprises a plurality of fields.

139) The method of claim 136 wherein said group of records comprises a plurality of attributes.

140) The method of claim 136 wherein said group of records are related by at least one common value.

141) The method of claim 140 wherein said at least one common value represents at least one value from said group of records.

142) The method of claim 136 further comprising:

displaying at least a subset of said group of records in a table.

143) The method of claim 136 wherein said pivot information comprises hidden fields.

144) The method of claim 136 wherein said pivot information defines hidden attributes.

145) The method of claim 136 wherein said pivot information comprises at least one pivot value associated with a pivot operation.

- 146) The method of claim 145 wherein said at least one pivot value is hidden from said preview table.
- 147) The method of claim 145 wherein said at least one pivot value is from said group of records.
- 148) The method of claim 145 wherein said pivot operation reduces redundant information displayed in said preview table.
- 149) The method of claim 145 wherein said pivot operation comprises:  
identifying at least one pivot axis in a table wherein said pivot access corresponds to said at least one pivot value;  
removing said at least one pivot axis from said table;  
generating said preview table by breaking said preview table into sub-tables based on said at least one pivot axis.
- 150) The method of claim 149 wherein said pivot axis comprises a row in said table.
- 151) The method of claim 149 wherein said pivot axis comprises a column in said table.
- 152) The method of claim 149 further comprising:  
sorting said group of records from said table into said sub-tables based on said at least one pivot value of said pivot axis.
- 153) The method of claim 145 wherein said pivot operation comprises a horizontal pivot comprising:

combining said sub-tables into said preview table by arranging said sub-tables horizontally.

154) The method of claim 153 further comprising:

adding an additional row to said preview table comprising said at least one pivot value, said additional row labeling said sub-tables.

155) The method of claim 145 wherein said pivot operation comprises a stack pivot comprising:

combining said sub-tables into said preview table by arranging said sub-tables vertically.

156) The method of claim 155 further comprising adding an additional row to said preview table containing said at least one pivot value before each of said sub-tables.

157) The method of claim 155 further comprising:

preserving each of said sub-tables;

labeling said sub-tables with said at least one pivot value.

158) The method of claim 145 wherein said pivot operation comprises a vertical pivot, said vertical pivot comprising:

combining sub-tables into a table by arranging said sub-tables vertically.

159) The method of claim 158 further comprising:

adding an additional column containing said at least one pivot value to label a group of rows comprising each sub-table.

160) The method of claim 145 wherein said pivot operation comprises a horizontal pivot.

161) The method of claim 160 wherein at least one additional horizontal pivot is nested with said horizontal pivot.

162) The method of claim 145 wherein said pivot operation comprises a stack pivot.

163) The method of claim 162 wherein at least one additional stack pivot is nested with said stack pivot.

164) The method of claim 145 wherein said pivot operation comprises a vertical pivot.

165) The method of claim 136 wherein said pivot information comprises fields for performing an ordering operation.

166) The method of claim 136 wherein said pivot information identifies fields to be shown in said preview table.

167) The method of claim 136 wherein said pivot information identifies a display sequence associated with said fields to be shown in said preview table.

168) The method of claim 136 wherein said displaying said preview table occurs in real-time subsequent to said obtaining pivot information.

169) The method of claim 136 further comprising:

providing contents of said preview table to a publication program.

170) The method of claim 136 wherein said pivot information is associated with said group of records.

171) The method of claim 170 wherein said pivot information has a dependent relationship with said group of records.

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